AMENDMENTS TO THE CLAIMS

This listing will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) A [[M]]method for ammonia production through a catalytic reaction of pressurized synthesis gas in an appropriate compressor with ~~many~~ a plurality of stages, each ~~of which is equipped with~~ stage having an inlet and outlet for ~~said~~ the synthesis gas, which method includes a purification step through liquid ammonia of said synthesis gas from water and carbon dioxide contained in it, ~~wherein~~ said purification step comprising ~~comprises the operating steps of~~:

arranging a gas-liquid mixer having one side in fluid communication~~, on one side~~ with the outlet of a first stage ~~of said compressor or with the outlet of an~~ or intermediate stage of said compressor ~~thereof and~~, ~~on the other~~ and having another side in fluid communication with the inlet of a further stage of said compressor~~, with the inlet of a stage~~ immediately following said first stage or ~~said~~ intermediate stage, said ~~mixter~~ mixer having [[a]] an axially extending portion of ~~reduced~~ decreasing cross section~~, extending for a prearranged axial length~~;

axially feeding into said mixer a flow of synthesis gas outbound from said first ~~stage~~ or ~~from said~~ intermediate stage of said compressor, and at the same time feeding into said mixer a flow of pressurized ~~as a flow of~~ liquid ammonia, said pressurized liquid ammonia being at a pressure greater than said flow of synthesis gas taken from the first or intermediate stage of compression, said flow[[s]] of synthesis gas and of liquid ammonia being coaxial and in co-current; and

separating substantially anhydrous synthesis gas from the mixture of said flows outbound from said mixer and sending said gas into said stage following said first stage or ~~said~~ intermediate stage.

2. (Currently amended) The [[M]]method according to claim 1, wherein said flow of synthesis gas is cooled to a temperature of between +8 and -20 C, before being fed into said mixer.

3. (Currently amended) The [[M]]method according to claim 2, wherein said cooling is carried out through a flow of liquid ammonia.

4. (Currently amended) The [[M]]method according to claim 3, wherein said cooling is carried out upstream of the inlet of said coaxial flows of synthesis gas and of liquid ammonia in said mixer.

5. (Currently amended) The [[M]]method according to claim 1, wherein said flow of liquid ammonia is fed into said mixer in the form of a plurality of high speed jets.

6. (Currently amended) The [[M]]method according to claim 5, wherein said flow of liquid ammonia is fed into said mixer making it pass through a nozzle equipped with appropriate suitably sized openings or slits.

7. (Currently amended) An [[A]]apparatus for carrying out the method of claim 1, comprising a compressor with many stages, each of which is equipped with an inlet and an outlet, wherein it comprises a gas-liquid mixer in fluid communication, on one side with the outlet of a first stage of said compressor or with the outlet of an intermediate stage thereof and, on the other side, with the inlet of a stage immediately following said first stage or said intermediate stage, said mixer having a portion of reduced cross- section, extending for a prearranged axial length.

8. (Currently amended) The [[A]]apparatus according to claim 7, wherein a gas-liquid separator is placed between said mixer and said subsequent stage of said compressor.

9. (Currently amended) The [[A]]apparatus according to claim 8, wherein at least one cooling group is placed between said mixer and said first stage of said compressor.

10. (Currently amended) The [[A]]apparatus according to claim 7, wherein it comprises a nozzle equipped with appropriate suitably sized openings or slits in fluid

communication on one side with said portion of reduced cross-section of said mixer and on the opposite side with a line for feeding a flow of liquid ammonia into said mixer.